

REMARKS

This is in response to the Office Action mailed November 27, 2006. In the Office Action claims 1-4 and 20-26 were rejected under 35 U.S.C. 101 as directed to non-statutory subject matter and under 35 U.S.C. 112, first paragraph, for failure to disclose how to practice a practical application.

Claims 1-4 have been canceled without prejudice.

Claims 20-26 are directed to a method for providing short-term memory for an adaptive autonomous robot. The method includes the steps of creating a plurality of directions and associating an event detected by at least one sensory processing unit with one of the plurality of directions.

It is respectfully submitted that such claims are statutory. Method claims are recognized to be one of the four statutory classes. In re Warmerdam, 33 F. 3d 1356, 1359, 31 USPQ 2d 1754 (Fed. Cir. 1994). And the specific steps that are recited are directed to a practical application and produce a useful, concrete and tangible result. In particular, these steps are directed to the provision of a short term memory for the robot which determines the current state of the robot as set forth at page 14, lines 13-14 of the specification.

Furthermore, by associating information received by a sensory processing module or unit with a specific direction, this method makes it possible for the robot to concentrate its processing resources by identifying the most active areas of the robot's environment. In particular, as set forth at page 16, line 29 to page 17, line 15 of the specification, the sensory processing modules (SPMs) 210 extract specific information from the data stream associated with the sensor. This data and directional information is stored in the sensory ego sphere (SES) 220. Processing resources are then directed to the most active areas of the SES and less active areas are ignored.

Further details of this method are set forth in the embodiment described at page 18, line 10 to page 20, line 10 of the specification. There it is noted that the SES is implemented as a multiply-linked list of pointers to data structures each represented as a vertex on a tessellated sphere. The sphere is illustrated in Fig. 3 and centered on the current location of the robot as stated at page 18, lines 1-2. Each vertex record contains pointers to nearest neighbor vertices and a pointer to a data structure that contains the sensory data associated with that vertex. As noted at page 20, lines 4-10 as data is written to the vertices, an attention agent searches the vertex list to find the most active vertex, which is called the focus vertex; and computing resources are concentrated on this vertex.

In view of the foregoing, applicant respectfully submits that the claims are directed to a practical application because a robot and its components and methods of operating them are a practical application. According to the “Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility,” all that is necessary to establish a practical application is that “a complete disclosure should contain some indication of the practical application for the claimed invention . . . ” (p. 4). As disclosed in the specification in conjunction with Figs. 1a and 1b, one particular practical application for the robot is movement along intersecting corridors; but any number of other activities are also contemplated.

With respect to the rejection of the claims on In re Warmerdam, 33 F. 3d 1354, 31 USPQ 2d 1754 (Fed. Cir. 1994), applicant submits that Warmerdam is not controlling and, in any event, the claims are not directed to mathematical algorithms or abstract ideas. Rather they are directed to specific and concrete things: a method for relating sensed events to directions from a robot.

The controlling law is not Warmerdam but State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F. 3d 1368, 47 USPQ 2d 1596 (Fed. Cir. 1998) and AT&T Corp. v.

Excel Communications, Inc., 172 F. 3d 1352, 50 USPQ 2d 1447 (Fed. Cir. 1999). And the Federal Circuit cannot be said to have approved Warmerdam in the language quoted in paragraph 14 of the Office Action. All the Federal Circuit said in Excel was that Warmerdam was not to the contrary with respect to the Federal Circuit's analysis in Excel. That analysis rejected the physical limitations analysis of the Freeman-Walter-Abele test, In re Grams, 888 F. 2d 835, 12 USPQ 2d 1824 (Fed. Cir. 1989) and In re Schrader, 22 F. 3d 290, 30 USPQ 2d 1455 (Fed. Cir. 1994) and instead focused on whether a "mathematical algorithm is applied in a practical manner to produce a useful result." As is made clear in the quoted portion from Warmerdam in paragraph 14, there were some reservations about Warmerdam: "Whether one agrees with the court's conclusions on the facts . . ."

In any event, this issue should be of no concern because claims 20-26 are not directed to a mathematical algorithm or an abstract idea. They relate to methods for providing a short term memory for a robot and specifically recite the steps of associating a sensed event with a direction relative to the robot. The dependent claims recite further details of this method such as combining (fusing) events associated with the same direction (claim 21), selecting a direction having the greatest number of events as a focus (claim 22) and with another direction when the robot has moved (claim 26).


It is respectfully submitted that such activities are practical and directed to producing useful, concrete and tangible results. Because these claims are directed to statutory subject matter they are also believed to be in compliance with 35 U.S.C. 112, first paragraph.

Aside from the fee for an extension of time, no additional fee is believed to be due for filing this response. However, if a fee is due, please charge such fee to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310.

If the Examiner believes a telephone interview would expedite prosecution of this application, he is invited to call applicant's attorney at the number given below.

Date: April 27, 2007

Respectfully submitted,

A handwritten signature in cursive script, reading "Francis E. Morris". The signature is written in black ink and is positioned above a horizontal line.

Francis E. Morris

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